arc of the tires. As shown, the pivot axis of the platforms may be below the axis of rotation of tires **342**,**343**.

[0041] Without departing from the present invention, the platforms may have a principal arc (i.e., the main arc segment) that is not concentric with the axis of rotation of the tires, having, for example, a center that is below or otherwise positioned with respect to the tire axis of rotation. Similarly, the platforms may have a principal arc that has a radius that is 0-25% of the radius of the tire, or more preferably between 0-15% or 0-10% or other.

[0042] With respect to surface area of the platform relative to the surface area of the vertical plane of a tire (**342** or **343**), the platform may have a surface area that is 25% of the surface area of the tire. This platform surface area may be 10 to 20 or 25% of the tire vertical plane surface area or be a larger about. The platform may have a surface area from 25-35% of the tire plane surface area or 35-50% or more than 50%, for example from 50% or 60% or more (i.e., 60-70% or 70-80% or other), as discussed below.

[0043] For example, if the tire has a radius of 4" (an 8" outer diameter), and the arc of the foot platform has a radius 3.5" (7" long), then the wheel has a vertical plane area of 50.27 or near 50 sq. in. The area of a 3.5" circle is 38.48 and half of that is near 20 sq. in. Since the axis **333** is below the rotation axis of the wheel, the platform may have a surface area of approximately 28-32 sq. in., or 30 sq. in. Thus, the platform a surface area of 30 sq. in is 60% of the vertical plane surface area of the tire, 50 sq. in.

[0044] If the platform is 6" long than the foot platform may have an area approximately 50% of the area of the tire's vertical plane, 25 sq. in. compared to 50 sq. in. If, however, the platform is 6" long and the tire 10" in diameter, then the surface area of the foot platform is approximately 30% of the vertical plane area. Further, for a 7" long platform and a 12" tire the platform surface area may be approximately 25% of the vertical plane area of the tire, depending on the configuration of the tire.

[0045] FIG. **17** illustrates device **410** that is similar to device **310** of FIGS. **15-16**, yet has a single wide tire **444**.

[0046] Other features of the embodiments of FIGS. **15-17** include that the foot platforms have their greatest width proximate that handle and wheel axle or, in other words, near their center.

[0047] In at least one embodiment of the present invention, the tires are smaller than the tire of a standard Solowheel (e.g., a device of the the '250 patent).

[0048] FIG. **4** shown that the length of the foot platforms is nearly as long as the tire outer diameter, the platform length being 2Y less than the outer diameter of the tire. The length of the foot platforms **20**,**30** may actually be longer than the diameter of the tire(s), for example, by 1 to 5% or even more, such as form 6-10%, or 11-15% or 16-20% or more.

[0049] Conversely, the length of foot platform **20** may be 1-5% less than the diameter of tire **41**, or 6-10%, or 11-15% or 16-20% less than the diameter of tire **41**, or even a further percentage less of that diameter. In one embodiment, the tires **20**,**30** may have an outer diameter of 8" and the platforms are 7" long (longitudinally, i.e., in the direction of travel of the device).

[0050] Referring to FIG. **14**, it can be seen that the folded platforms nearly reach the same height as their associated tires, X being the difference. It should be noted that the platforms may be taller or shorter than their associated tires by the same range of percentage given above for the length of each platform relative to its tire.

[0051] With respect to other components, the battery **65** may be a lithium ion or other suitable battery. Suitable gyroscopic position sensors are known in the art. The device may be made of any suitable materials known for use in self-balancing vehicles.

[0052] While the invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modification, and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth, and as fall within the scope of the invention and the limits of the appended claims.

1. A central wheel structure self-balancing transportation device, having one or more of the following:

a dual tire structure with pressure equalization;

linkage between a handle and foot platforms such that movement of the handle can achieve movement of the foot platforms; and

a compact ergonomic design.

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